



Dart Hawkesbury  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

**D1048**  
**Job Sheet 167426**



Part No: D1048

Job Qty: 10 ea

Part Name: Clamp



Part Weight: 0 lbs

Status: Scheduled

Priority: High

Job Created: 10/31/17

Job Tracking No:

Due Date: 11/10/17

Created By: Victoria Michaud-Febrille

Type: SOLD

Description:

Ship Via:

### Bill of Materials

### Job Routing

| Op No | Operation          | Qty    | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |           | Sign-off                |
|-------|--------------------|--------|------------|----------|-----------|---------|-----------------------|-----------|-------------------------|
|       |                    |        |            |          | Setup hrs | Run Hrs | Workcenter / Supplier | Lead Time |                         |
| 90    | Start up Operation | 10 Ea  |            | 11/9/17  | 0.00      | 0.00    | Start Up Waterjet1    |           | DL                      |
| 100   | Waterjet           | 10 pcs |            | 11/9/17  | 0.00      | 0.27    | Waterjet1             |           | DL DAS                  |
| 120   | QC                 | 10 pcs |            | 11/9/17  | 0.00      | 0.00    | QC8                   |           | 38                      |
| 130   | Small Fab          | 10 pcs |            | 11/9/17  | 0.00      | 0.30    | Small Fab             |           | MLL 9-89                |
| 140   | Brake NC           | 10 pcs |            | 11/9/17  | 0.00      | 0.29    | Brake NC 1            |           | MLL DAS                 |
| 150   | QC                 | 10 pcs |            | 11/9/17  | 0.00      | 0.00    | QC5                   |           | 38                      |
| 160   | Powdercoat         | 10 pcs |            | 11/10/17 | 0.00      | 0.08    | Powdercoat4           |           | BR 17-14                |
| 170   | QC                 | 10 pcs |            | 11/10/17 | 0.00      | 0.00    | QC3                   |           | 38                      |
| 180   | Packaging          | 10 pcs |            | 11/10/17 | 0.00      | 0.00    | Packaging3            | CA        | NOV 14 2017             |
| 190   | QC21-SA            | 10 Ea  |            | 11/10/17 | 0.00      | 0.00    | QC21                  |           | DAS 21 9-89 NOV 15 2017 |

Part Op 100 - 1-Cut as per Dwg D1048 Prog Rev: \_\_\_\_\_

Descriptions: 130 - 1-Deburr if required. Break all sharp corners .010 / .020 as per dwg.

140 - Form as per dwg using DT10143

160 - START TIME: 10:20 OVEN TEMPERATURE: 320° FINISH TIME: 10:50

### Job Allocations

| Operation             | Component Part | Required | Inventory | Allocated | Std Qty |
|-----------------------|----------------|----------|-----------|-----------|---------|
| 90-Start up Operation | M304S16GA      | 0        | 164       | 0         | 0       |

### Part Specifications

| Spec No | Description | Target/Tolerance               | Limits         | Type     | Special Comments |
|---------|-------------|--------------------------------|----------------|----------|------------------|
| 1       | Clamp       | 0.750Inches ± 0.010            | 0.760<br>0.740 |          |                  |
| 2       | Clamp       | 2.125Inches ± 0.010            | 2.135<br>2.115 |          |                  |
| 3       | Clamp       | 1.705Inches ± 0.010            | 1.715<br>1.695 |          |                  |
| 4       | Clamp       | 0.375Inches ± 0.010            | 0.385<br>0.365 |          |                  |
| 5       | Clamp       | 0.203Inches + 0.005<br>- 0.001 | 0.208<br>0.202 | Diameter |                  |

**DART**  
AEROSPACE  
**S006136**



Clamp

**Dart Aerospace Ltd.**  
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CANADA  
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[www.dartaerospace.com](http://www.dartaerospace.com)

**PART NO:**  
**Revision:**  
**Operation:**  
**Quantity:**  
**Change No:**

**D1048**

**Start up Operation**  
**10**

**Mfg Date: 11/06/17**  
**Job No: 167426**





DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**Work Order update only ☐

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>DISPOSITION</b><br><br>Rework <input checked="" type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                           | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input checked="" type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                        |
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                                  |
| <b>Description Work Order Deviation</b><br><br><div style="font-size: 1.2em;">Change Dims to ensure proper bent shape.</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Disposition</b><br><br><div style="font-size: 1.2em;">           Dim 1.765 now 1.755<br/>           Dim 2.125 now 2.175<br/><br/>           Acceptable. No change to bent shape.<br/>           Reviewed. Acceptable to use for w/o 167426. [Signature] 2017.11.06         </div>                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Root Cause</b><br><table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; vertical-align: top;">           Environment <input type="checkbox"/><br/>           Design <input type="checkbox"/><br/>           Doc/Data <input type="checkbox"/><br/>           Equip/Tooling <input type="checkbox"/><br/>           Handling/Pre <input type="checkbox"/><br/>           Material <input type="checkbox"/><br/>           Internal Transport <input type="checkbox"/><br/>           Tribal Knowledge <input type="checkbox"/><br/>           LOA <input type="checkbox"/><br/>           Substation <input type="checkbox"/><br/>           Past Expiry Date <input type="checkbox"/><br/>           Misidentified <input type="checkbox"/> </td> <td style="width:50%; vertical-align: top;">           No Re-verification <input type="checkbox"/><br/>           Operator <input type="checkbox"/><br/>           Offset/Setup <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Training <input type="checkbox"/><br/>           Use for Testing <input type="checkbox"/><br/>           Poor Information <input type="checkbox"/><br/>           Rushing <input type="checkbox"/><br/>           Product Improvement <input type="checkbox"/><br/>           Process Improvement <input type="checkbox"/><br/>           Manufacturing Process <input type="checkbox"/><br/>           Past Due <input type="checkbox"/> </td> </tr> </table> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Environment <input type="checkbox"/><br>Design <input type="checkbox"/><br>Doc/Data <input type="checkbox"/><br>Equip/Tooling <input type="checkbox"/><br>Handling/Pre <input type="checkbox"/><br>Material <input type="checkbox"/><br>Internal Transport <input type="checkbox"/><br>Tribal Knowledge <input type="checkbox"/><br>LOA <input type="checkbox"/><br>Substation <input type="checkbox"/><br>Past Expiry Date <input type="checkbox"/><br>Misidentified <input type="checkbox"/> | No Re-verification <input type="checkbox"/><br>Operator <input type="checkbox"/><br>Offset/Setup <input type="checkbox"/><br>Supplier <input type="checkbox"/><br>Training <input type="checkbox"/><br>Use for Testing <input type="checkbox"/><br>Poor Information <input type="checkbox"/><br>Rushing <input type="checkbox"/><br>Product Improvement <input type="checkbox"/><br>Process Improvement <input type="checkbox"/><br>Manufacturing Process <input type="checkbox"/><br>Past Due <input type="checkbox"/> | <b>FAULT CATEGORY</b><br><table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%; vertical-align: top;">           Pressure/Forced <input type="checkbox"/><br/>           Bending <input type="checkbox"/><br/>           Centre Not Concentric <input type="checkbox"/><br/>           Cracks <input type="checkbox"/><br/>           Crimp/Kink/Ripple/Wave <input type="checkbox"/><br/>           Cuffs <input type="checkbox"/><br/>           Crushing <input type="checkbox"/><br/>           Heat Treat <input type="checkbox"/><br/>           Wave/Twist in Tube <input type="checkbox"/><br/>           Marks/Chatter <input type="checkbox"/> </td> <td style="width:33%; vertical-align: top;">           Temperature/Cure <input type="checkbox"/><br/>           Set-up <input type="checkbox"/><br/>           BOM/Route <input type="checkbox"/><br/>           Broken/Damage/Defect <input type="checkbox"/><br/>           Inspection Incomplete/Unqualified <input type="checkbox"/><br/>           Contamination <input type="checkbox"/><br/>           Countersink <input type="checkbox"/><br/>           Cut Too Short <input type="checkbox"/><br/>           Instructions Incomplete/Unclear <input type="checkbox"/><br/>           Drill Holes <input type="checkbox"/> </td> <td style="width:33%; vertical-align: top;">           Power Loss/Surge <input type="checkbox"/><br/>           Folio/Program <input type="checkbox"/><br/>           Grain <input type="checkbox"/><br/>           Weld <input type="checkbox"/><br/>           Wrong Stock Pulled <input type="checkbox"/><br/>           Out of Sequence <input type="checkbox"/><br/>           Off-set <input type="checkbox"/><br/>           Misabeled <input type="checkbox"/><br/>           Fit/Function <input type="checkbox"/><br/>           Misaligned/off center <input type="checkbox"/> </td> </tr> </table> |  |  | Pressure/Forced <input type="checkbox"/><br>Bending <input type="checkbox"/><br>Centre Not Concentric <input type="checkbox"/><br>Cracks <input type="checkbox"/><br>Crimp/Kink/Ripple/Wave <input type="checkbox"/><br>Cuffs <input type="checkbox"/><br>Crushing <input type="checkbox"/><br>Heat Treat <input type="checkbox"/><br>Wave/Twist in Tube <input type="checkbox"/><br>Marks/Chatter <input type="checkbox"/> | Temperature/Cure <input type="checkbox"/><br>Set-up <input type="checkbox"/><br>BOM/Route <input type="checkbox"/><br>Broken/Damage/Defect <input type="checkbox"/><br>Inspection Incomplete/Unqualified <input type="checkbox"/><br>Contamination <input type="checkbox"/><br>Countersink <input type="checkbox"/><br>Cut Too Short <input type="checkbox"/><br>Instructions Incomplete/Unclear <input type="checkbox"/><br>Drill Holes <input type="checkbox"/> | Power Loss/Surge <input type="checkbox"/><br>Folio/Program <input type="checkbox"/><br>Grain <input type="checkbox"/><br>Weld <input type="checkbox"/><br>Wrong Stock Pulled <input type="checkbox"/><br>Out of Sequence <input type="checkbox"/><br>Off-set <input type="checkbox"/><br>Misabeled <input type="checkbox"/><br>Fit/Function <input type="checkbox"/><br>Misaligned/off center <input type="checkbox"/> |
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